

ABSTRACT

A process of electrodepositing a substantially flat conductive layer on a workpiece surface is provided. In the process, various transition current densities are determined experimentally by evaluating the effects of the plating current density on gap fill profile in the smallest cavities with the largest tendency to over-plate on the substrate. After determining the transition currents on experimental wafers or dies, an electrochemical plating process is performed to apply selected transition current densities as process current densities to form a substantially flat profile over the smallest cavities.